

While a few which remained on the growing plant, crawled to the base and spun themselves up among the folds of dead leaves, each resting on a little carpet of silk spun on the leaf. It is, therefore, obvious that in a wild state the larvæ descend the stems of the plant and hibernate among moss, dead leaves, or other shelters, suitable for the purpose of hibernation.

Upon microscopical examination the honey-gland does not appear more developed than in the previous stage, when it appears as a scar on the epidermis, no real incision being visible.

(To be continued.)

## Collecting in Turkey, mainly near Constantinople, in 1913.

By P. P. GRAVES, F.E.S.

The autumn of 1912 died away in storm and incessant rain, a fit prelude to the disasters which at the end of October and in early November shook the Turkish Empire to its foundations. The winter round Constantinople was unusually severe. Snow fell often and heavily, and the "Tipi" or N.E. blizzard, raged for days at a time. 1913, however, proved a very fair year for collecting, and although I had but little time to spare, I was yet able to snatch occasional half holidays in the open all through the summer till August 6th, when I left for England. Spring began unusually early owing to the prevalence of southerly winds. The last half of March was extremely warm and dry. April was on the whole rather cold, North winds having set in again, but May, June, and above all July, were exceptionally hot.

The fact that the whole Tchataldja district was, as it still is, a great fortress, that camps of Kurds and other truculent irregulars were pitched in parts of the Belgrade forest, where there were also not a few armed deserters, and after the Grand Vizier's murder a party of fugitive conspirators and a large number of search parties of gendarmes, who were rather inclined to arrest suspicious "shapkalis" (persons wearing hats), greatly circumscribed collecting on the European side of the Bosphorus. The ground, which I had previously worked at Küçük-Tchekmedjé, and where I had taken *Agriades thesites*, had been converted first into a cholera camp and secondly into a burying ground for some 2,000 victims of the epidemic. I was therefore compelled to restrict my operations mainly to the Asiatic side of the water. In the following notes I propose to deal separately with the European and with the Asiatic localities which I visited, adding a brief account of my observations at Smyrna, which I visited in mid-October after my return to the East.

I. BOSPHORUS.—EUROPEAN SIDE.—I did not do any collecting on the European side of the water till June 4th, when I paid a visit of a few hours to the more accessible part of the Belgrade Forest district. I found most of the species one expected to find, out in some numbers, though I only got one *Linenitis camilla*, a fine ♀, and found the Lycænids and Urbicolids which emerge in May over or worn out. *Coenonympha arcania*, *Nordmannia ilicis*, and *Brenthis daphne* were freshly emerged and ♂s of *Argynnis aglaia* were already on the wing with *Melitaea didyma*. A nice specimen of *Pterogon proserpina*, taken buzzing over some low plants, was my best capture.

On June 24th I again visited the woods in search of *Pararge roxelana*, *Lycaena arion*, and *Heteropterus morpheus*. *Pararge roxelana* was pretty rare everywhere this year, and I only got two specimens, one of which was not perfect. *H. morpheus* occurred in great abundance on some new ground I visited, a track from the Büyük-deré, Belgrade Forest road to Therapia, through woods at first and then through a series of valleys very slightly cultivated and bordered by productive patches of brushwood and heathy or grassy wastes. *H. morpheus* was very common indeed here, but most of the specimens I took were already rather worn. I only took one *Lycaena arion*, a large rather worn ♀. Count Bukuwky, who accompanied me on this outing, had taken about a dozen *L. arion* in the preceding fortnight, both here and rather nearer Therapia. A species which was very common this year on both sides of the Bosphorus was *Dryas paphia* many of which were flying to bramble blossom on June 24th. Even more common was *Dryas pandora*, which was extraordinarily abundant, everywhere in 1913. I saw *Loweia alciphron* of the *meliboens* form but it was worn to rags. The Satyrids were well out, *Satyrus circe*, *Hipparchia semele* and what one should call, if M. Jullien's conclusions (*Bull. Soc. Lep. Gen.*, vol. i., p. 365) are correct, *S. syriaca* instead of *S. hermione*. I shall be very glad to send material to any lepidopterist who wishes to examine the male genitalia of these Constantinople "*hermione*."

In July I had little chance of paying more than very brief visits, and these on business to Therapia. None of the species I took there were remarkable but I noticed (1) a comparative abundance of *Issoria lathonia*, a species which I had found rare near Constantinople in previous years, (2) a great increase in the numbers of *Raywardia telicanus*, which seems to have been common everywhere this year on the Bosphorus. Count Bukuwky took several *P. icarus* ab. *icarinus* at one locality near Therapia, where I have not yet taken *thersites*. He also got a decent specimen of *Anthrocera (Zygæna) laeta*, a rare species, near Constantinople. His specimen came near ab. *mannerheimi*, Chard. *Anthrocera punctum*, another species, which was fairly common this year, occurred not infrequently on the downs behind Büyük-deré.

II. BOSPHORUS.—ASIATIC SIDE.—My first collecting on the Asiatic side in 1913 was on March 13th, when I paid a visit to Prinkipo Island, a pine-clad island, the fourth of a chain known generally as the "Princes Islands" and in Turkish as "Kizil Adalar" (the Red Islands) on account of the sandstone of which they are largely composed. Prinkipo, I may add, contains some limestone outcrops and shows signs of former volcanic activity. In March I took *Callophrys rubi* here with *Rumicia phlaeas* and hibernated *Gonepteryx rhamni*, *Vanessa io*, *Polygonia egea*, and *Eugonia poly-chloros* (hibernated) were also seen with *Pieris brassicae* and a single *Pieris rapae*. My next visit to Prinkipo was on May 20th when I found a few *Epinephela jurtina* just out, noted worn *Aricia medon* (*astrarche*) and *A. anteros*, single specimens of *Iphiclidea podalirius*, *Limenitis camilla* and *C. rubi*, all of them in bad order, one very large ♂ *Euchloë cardamines*, also worn, and nothing else. Everything was already somewhat burnt, the island containing no springs worth mentioning and being out of the "Bosphorus draught," with the result that it misses not a few spring and summer showers. I was unable to visit the island in late June

when I might have taken *Polyommatus meleager*, which Mr. Muschamp has received from the island. I paid my last visit to Prinkipo on August 4th, when I found *Rapivardia telicannus* not uncommon on bramble blossom. The only Satyrids seen were many worn *S. syriaca* (*hermione*) and one fresh ♂ *S. statilius*, unhappily torn. *L. camilla*, worn *E. jurtina* and the common Pierids were the only other things noted, with *Pyrameis cardui*.

Most of my collecting on the Asiatic side was done at Gyök-su. I first visited this good spot this year, on March 28th, when I added *Thais polyxena* var. *cassandra* to my Constantinople list. The specimens from this locality were inclined to be small and dark. They show from one to three crimson spots on the anterior margin and between the apex and discoidal cell of the forewings. The usual spring insects were coming out, and *Callophrys rubi* was abundant. I took one *Pieris napi*, never very common at Constantinople in the spring brood, with *Pontia daplidice* g.v. *bellidice*, some common things and a fresh *Taeniocampa miniosa*. I saw my first *Euchloë cardamines* of the year. On subsequent visits to Gyök-su in April I noted the following dates of emergence of spring butterflies: April 7th, *Papilio machaon*, *Leptostia sinapis*, *Colias edusa*, *Celastrina argiolus*; April 15th, *Glancopsyche cyllarus*, one ♂; when my collecting was cut short by a heavy shower. April 18th, *Iphiclidides podalirius*, *Lowcia dorilis* ♀s, *Nisoniades tages*, *Erynnis alceae* and *Pararge aegeria*. I saw a very worn *Scolitantides baton* on that date. *A. anteros* first appeared on April 25th with *M. cinxia* and *Euclidia glyphica*. On April 29th I took a good specimen of *Hesperia malvae*, which seems rare near Constantinople, and a male of *H. armoricanus*. *E. cardamines* was not at all uncommon in April and I took some very fine specimens, one ♀, which was by way of exception worn, having traces of ♂ colour on the forewings. *Thais polyxena* var. *cassandra* occurred in most localities, but usually singly.

During the first fortnight in May I paid two visits to Erenkeui and did some collecting on the bare downs there. I took worn *Anthocharis belia* and fresh g.a. *ausonia* there on May 7th, and my first *Chrysophanus thersamon* of the year with very fresh *Aricia medon* (*astrarche*), *P. icarus* and *M. cinxia*, the last small in this locality. I found *C. pamphilus* out on that date. On May 11th I took *Pararge maera* already the worse for wear, and saw the first *Limenitis camilla* of the season. On May 16th and 24th I collected at Gyök-su finding a locality for *Hesperia sidae*, and also taking a fair number of *Polyommatus amanda* on the latter date, *Polyommatus semiargus* of the *intermedia* form was rare and *H. armoricanus* occurred sparingly here.

On May 16th I found *Melitaea trivia* out in fair numbers and perfect condition in one of its haunts at Gyök-su, and on that day took the first *M. didyma* of the year. This species was not as common as usual in 1913. On May 30th I got in a couple of hours at Gyök-su and took two *Lowcia alciphron* var. *meliboëus* ♂s and a ♂ *Hesperia malvae* with the clubs of the antennæ Indian red beneath. Dr. Chapman, who kindly examined the genitalia of this specimen, informs me that it is certainly *H. malvae*. *N. ilicis* was just out with *A. crataegi*, but the recent rains had damaged many butterflies. On this day most of the *V. io* larvæ which I had taken during my preceding visits to Gyök-su, pupated. They emerged between June 10th and 20th, as

good-sized imagines. *Eugonia polychloros* was not so common this year, and I saw few *Euranessa antiopa* and *P. c-album*; *V. io*, on the other hand was commoner than usual. On June 13th I spent an afternoon at Tokat, near Beikos. There I found plenty of *Brenthis daphne* with numerous *Dryas pandora* and *D. paphia*. One very fresh *Pararge roxelana* was taken. I did not work the woods to the south, which are an extension of the Alem-Dagh forest. Here Count Bukowky, in the first week of June, took one or two *Argynnis adippe*—a species I have not yet seen myself here—and a number of fine *M. athalia* of a form which the Rev. G. Wheeler says is var. *mehadiensis*. On June 18th, a hot but cloudy day, I spent two hours at Gyök-su and found a locality for the ab. *leucomelas* of *M. galatea* var. *procida*, which turned up not uncommonly. Odd specimens of *Erynnis altheae* and *Powellia orbifer* occurred with numbers of *Thymelicus acteon*, *Adopaea flava*, and *A. sylvanus*. Many *Nordmannia ilicis* and *N. acariae* were about, but nearly all were in bad order. Of the big Satyrids *S. circe* was taken some ten days in advance of its usual date, and *Hipparchia semele* and *S. syriaca (hermione)* seen. I took a good second brood specimen of *Scolitantides baton*. On June 29th I walked from Alemdagh to Riva and Anadol Fener on the Black Sea. There I had little time to collect, but noted great abundance of *A. crataegi*, *I. latonia*, *A. aglaia*, *B. daphne*, *E. jurtina*, and other common things in the Alem-Dagh woods. *C. arcania* and *N. ilicis* were common but worn. Near the ford over the Riva-Su I took *Brenthis dia* mostly worn, and fresh *G. rhamnii*. I also got a couple of very worn *M. athalia* var. *mehadiensis* in the clearings. On the sandy coast near Riva *Plebeius argus (aegon)*, *Aricia medon (astrarche)*, of the second brood, and *Anthrocera punctum*, and *A. filipendulae* occurred in some numbers with *M. procida* ab. *leucomelas*. Count Bukowky took *A. carniolica* here. On Sunday, July 6th, I spent two hours collecting in a dry oak wood near Yakadjik, a pretty spot on the Asiatic side of the Sea of Marmora, between Erenkeui and Ismid. Here *Satyrus syriaca (hermione)* was very common, and four or five specimens were often to be brushed off one tree-trunk. *Pararge roxelana* was rare and worn. A good *C. edusa* ab. ♀ *helice* and several *A. thersites*, which was only just appearing, while *P. icarus* was well out, were, with *A. carniolica* and a single ♀ *Tarucus balcanicus*, my best captures. On July 10th I visited Gyök-su, but only had a bare hour there and got little, *Anthrocera carniolica* and *A. punctum* being my best captures.

My last visit to Gyök-su was on October 28th. On that date not much was flying beyond the Pierids, *Pyrameis cardui* and some common Lycænids, but I made some interesting observations. I saw one or two "blue" ♀s of *P. icarus*, which are not common here. They were, however, much less heavily suffused with blue than specimens of the British race var. *tutti*, Obthr., which I took in the Isle of Wight in September. *Aricia medon (astrarche)* was unmistakably of the third brood. The specimens were very small, the underside ground colour resembling that usual in spring specimens and never approaching the rich yellow-brown or even orange-brown hue of summer specimens. I took a very large but worn *C. edusa* ab. ♀ *helice* and saw what I took to be *C. erate* but could not take it. *li. telicanus* was extremely abundant but mostly in bad order.

III. SMYRNA.—I had about half an hour's collecting in the warm



and sunny garden of the British Consulate at Smyrna on October 18th. Large and well marked *Pieris brassicae* occurred there with a few *P. rapae*, *Erynnis alcae*, one passable ♀ *Hesperia armoricanus*, one fine and beautifully fresh *P. egea*, *Aricia medon* (*astrarche*) (third brood), *Pyrameis cardui*, *P. atalanta* and *Raywardia telicanus*. The bad weather and lack of time preventing me from collecting on other days outside the town. Several *Sesia stellatarum* and *P. brassicae* came on board our steamer as we lay off Mitylene on October 15th.

IV. CORRECTIONS.—To the additions and corrections to my Constantinople list (*Ent. Rec.*, xxiv., no. 1, p. 12), which were published in the *Ent. Rec.*, xxv., no. 5, p. 139, I must add the following species of *Rhopalocera* previously unrecorded. *T. polyxena* var. *cassandra*, *A. adippe* and *M. athalia* var. *mehadiensis*. *L. arion* has been recorded already (*Ent. Rec.*, xxv., no. 4, p. 118), and I should add *P. meleager*, were it not that there has been so much building on Prinkipo island that it may have disappeared. Further may I correct a bad mistake of mine which appears on p. 317 of vol. xxiii. of the *Ent. Rec.* I there speak of *Pontia* (*Synchlōe*) *callidice*. This is a slip. *P. chloridice* was what I had intended to write.

### **Erebia gavarniensis, Warren, and caecilia, Hb.**

By G. T. BETHUNE-BAKER, F.L.S., F.Z.S., F.E.S.

Mr. Rowland-Brown's valuable note on Mr. Warren's interesting paper (*antea*, vol. xxv., p. 294 and 273 respectively), has made me look up my specimens from Gavarnie, all of which were taken in the Val d'Ossue, and my series is, I think, of sufficient interest in confirmation of Mr. Rowland-Brown's remarks to warrant a few further words on the matter.

Of the type form *gavarniensis* I have eight males. These are entirely black above and below. Of my dozen females I may have two that would answer Mr. Warren's description, one without eye-spots above (by this I take it he means the usual sub-apical small black spots with no white) and one with. The others differ in some respects, and it may be well to show how the species varies. Seven of these females are entirely black above, five of them having two black dots between veins 4 and 7 (one between 4 and 5 and one between 5 and 6). On the underside one specimen is entirely umber-brown and has the rust-coloured sub-apical patch, referred to by Mr. Warren, without spots in the primaries; the secondaries have a lemon dash between veins 4 and 5, and a trace of a small lemon spot between 6 and 7. Three others are similar to the foregoing, but with the dash in the secondaries enlarged into an ill-defined spot.

Another specimen is on the underside obscurely rusty in the radial area of the primaries, with the dashes between 4 and 5 and 6 and 7 enlarged into spots, dirty ochreous in colour, and with a trace of similar coloured interneural dashes between veins 2 and 3 and 3 and 4.

The sixth and seventh specimens have a sub-apical tawny patch on the primaries above, whilst below there is a largish sub-apical dirty ochreous spot in the primaries, the markings of the secondaries being very similar to those of the fifth specimen just described.